

magnesium, calcium, strontium, titanium, chromium, manganese, iron, copper, zinc, silicon and fluorine ions.

9. (Amended) The bone implant as claimed in claim 7, wherein the ions incorporated into the surface of the bone implant are from one or more of the groups of the periodic table consisting of groups IIA, VIIB, IIB, IVA AND VIIA.

10. (Amended) The bone implant as claimed in any one of the preceding claims, wherein the ions comprise magnesium, manganese, zinc or silicon ions.

11. (Amended) The bone implant as claimed in any one of the preceding claims comprising a body portion coated with a bioactive material coating.

12. (Amended) The bone implant as claimed in claim 11, wherein the body portion is formed of a metal or a metal alloy.

13. (Amended) The bone implant as claimed in any one of claims 1 to 10, wherein the bone implant substantially comprises a bioactive material.

14. (Amended) The bone implant as claimed in claim 13, wherein the bone implant is in granular form.

20. (Amended) The method as claimed in any one of claim 15, wherein the ions are present at between  $1 \times 10^{10}$  and  $1 \times 10^{18}$  ions per  $\text{cm}^2$  of the implant surface.

21. (Amended) The method as claimed in any one of claim 15, wherein the ions comprise one or more of the following:

magnesium, calcium, strontium, titanium, chromium, manganese, iron, copper, zinc, silicon and fluorine ions.

Kindly add new claims 25 and 26 as follows:

25. (New) A bone implant having a surface comprising a bioactive material, wherein:

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- (a) the bioactive material has incorporated therein ions from one or more of the groups of the periodic table consisting of groups IIA, IVA, VIIA AND transition elements;
- (b) the ions are incorporated into the surface atomic layers of the bone implant up to a maximum depth of 200 nm by ion beam implantation or cathodic arc deposition; and
- (c) the bioactive material is a material that is capable of promoting bone growth onto the bone implant.

26. (New) The bone implant of claim 12 wherein the metal or metal alloy is titanium or titanium alloy.